

AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended): A method of manufacturing a long-life heat-resisting low alloy steel welded component, the method comprising:

subjecting a base metal containing, at % by weight, C: 0.15% or less, Si: 0.5% or less, Mn: 0.3 to 0.8%, Cr: 1.9 to 2.6%, Mo: 0.87 to 1.20%, and a balance of iron and unavoidable impurities, to a hot working, to a heat treatment, and then to a welding,

wherein the base metal is ~~normalized once~~ further subjected to a normalizing one or more times in addition to the original heat treatment and before the welding so as to reduce, at former austenite grain boundaries of the welded component, an amount of coarse carbides, which have been found to be transformed to be the origin of that cause creep damage of type 4 creep damage through the weld heat, remained in the base metal passed through the original heat treatment only relative to an amount of the coarse carbides that would occur in the welded component in the absence of the normalizing.

Claim 2 (Previously Presented): The manufacturing method according to claim 1, wherein the base metal has been subjected to annealing, or normalizing and tempering.

Claim 3 (Original): The manufacturing method according to claim 1, wherein the base metal is subjected to the hot working in a normalizing temperature range, after the normalizing.

Claim 4 (Original): The manufacturing method according to claim 1, wherein the base metal contains, at % by weight, Mn: 0.3 to 0.6% and Mo: 0.87 to 1.13%.

Claim 5 (Original): The manufacturing method according to claim 4, wherein the normalizing of the base metal is carried out at least twice.

Claim 6 (Currently Amended): A method of manufacturing a long-life heat-resisting low alloy steel welded component, the method comprising:

subjecting a base metal containing, at % by weight, C: 0.04% to 0.10%, Si: 0.5% or less, Mn: 0.1 to 0.6%, Cr: 1.9 to 2.6%, Mo: 0.05 to 0.3%, V: 0.20 to 0.30%, Nb: 0.02 to 0.08%, W: 1.45 to 1.75%, B: 0.0005 to 0.006% and a balance of iron and unavoidable impurities, to a hot working, to a heat treatment, and then to a welding,

wherein the base metal is ~~normalized once~~ further subjected to a normalizing one or more times in addition to the ~~original~~ heat treatment and before the welding ~~so as to reduce, at former austenite grain boundaries of the welded component, an amount of coarse carbides, which have been found to be transformed to be the origin of that cause creep damage of type 4 creep damage through the weld heat, remained in the base metal passed through the original heat treatment only~~ relative to an amount of the coarse carbides that would occur in the welded component in the absence of the normalizing.

Claim 7 (Previously Presented): The manufacturing method according to claim 6, wherein the base metal has been subjected to annealing, or normalizing and tempering.

Claim 8 (Original): The manufacturing method according to claim 6, wherein the base metal is subjected to the hot working in a normalizing temperature range, after the normalizing.

Claim 9 (Currently Amended): A method of manufacturing a long-life heat-resisting low alloy steel welded component, the method comprising:

subjecting a base metal containing, at % by weight, C: 0.2% or less, Si: 1.0% or less, Mn: 0.3 to 0.9%, Cr: 0.3 to 1.5%, Mo: 0.4 to 0.7%, and a balance of iron and unavoidable impurities, to a hot working, to a heat treatment, and then to a welding,

wherein the base metal is ~~normalized once~~ further subjected to a normalizing one or more times in addition to the ~~original~~ heat treatment and before the welding so as to reduce, at former austenite grain boundaries of the welded component, an amount of coarse carbides ~~, which have been found to be transformed to be the origin of that~~ cause creep damage of type 4 creep damage through the weld heat, remained in the base metal passed through the original heat treatment only relative to an amount of the coarse carbides that would occur in the welded component in the absence of the normalizing.

Claim 10 (Previously Presented): The manufacturing method according to claim 9, wherein the base metal has been subjected to annealing, or normalizing and tempering.

Claim 11 (Original): The manufacturing method according to claim 9, wherein the base metal is subjected to the hot working in a normalizing temperature range, after the normalizing.

Claim 12 (Original): The manufacturing method according to claim 9, wherein the base metal contains, at % by weight, Mn: 0.3 to 0.6%, Cr: 0.5 to 1.5% and Mo: 0.40 to 0.65%.

Claim 13 (Original): The manufacturing method according to claim 9, wherein the base metal further contains, at % by weight, V: 0.22 to 0.50%.

Claim 14 (Currently Amended): A long-life heat-resisting low alloy steel welded component manufactured by a method comprising:

subjecting a base metal containing, at % by weight, C: 0.15% or less, Si: 0.5% or less, Mn: 0.3 to 0.8%, Cr: 1.9 to 2.6%, Mo: 0.87 to 1.20%, and a balance of iron and unavoidable impurities, to a hot working, to a heat treatment, and then to a welding,

wherein the base metal is ~~normalized once~~ further subjected to a normalizing one or more times in addition to the original heat treatment and before the welding so as to reduce, at former austenite grain boundaries of the welded component, an amount of coarse carbides, which have been found to be transformed to be the origin of creep that cause damage of type 4 creep damage through the weld heat, remained in the base metal passed through the original heat treatment only relative to an amount of the coarse carbides that would occur in the welded component in the absence of the normalizing.

Claim 15 (Previously Presented): The heat-resisting low alloy steel welded component according to claim 14, wherein the base metal has been subjected to annealing, or normalizing and tempering.

Claim 16 (Original): The heat-resisting low alloy steel welded component according to claim 14, wherein the base metal is subjected to the hot working in a normalizing temperature range, after the normalizing.

Claim 17 (Original): The heat-resisting low alloy steel welded component according to claim 14, wherein the welded component can be applied to at least one of longitudinal joint and circumferential joint of pipes, vessel, valve casing and branch pipes that are used under a high-temperature and high-pressure steam atmosphere at a temperature of 450°C or higher.

Claim 18 (Original): The heat-resisting low alloy steel welded component according to claim 14, wherein the base metal contains, at % by weight, Mn: 0.3 to 0.6% and Mo: 0.87 to 1.13%.

Claim 19 (Original): The heat-resisting low alloy steel welded component according to claim 18, wherein the normalizing of the base metal is carried out at least twice.

Claim 20 (Currently Amended): A long-life heat-resisting low alloy steel welded component manufactured by a method comprising:

subjecting a base metal containing, at % by weight, C: 0.04% to 0.10%, Si: 0.5% or less, Mn: 0.1 to 0.6%, Cr: 1.9 to 2.6%, Mo: 0.05 to 0.3%, V: 0.20 to 0.30%, Nb: 0.02 to 0.08%, W: 1.45 to 1.75%, B: 0.0005 to 0.006% and a balance of iron and unavoidable impurities, to a hot working, to a heat treatment, and then to a welding,

wherein the base metal is ~~normalized once~~ further subjected to a normalizing one or more times in addition to the original heat treatment and before the welding ~~so as to reduce, at former austenite grain boundaries of the welded component, an amount of coarse carbides, which have been found to be transformed to be the origin of that~~ cause creep damage of type 4 ~~creep damage through the weld heat, remained in the base metal passed through the original heat treatment only~~ relative to an amount of the coarse carbides that would occur in the welded component in the absence of the normalizing.

Claim 21 (Previously Presented): The heat-resisting low alloy steel welded component according to claim 20, wherein the base metal has been subjected to annealing, or normalizing and tempering.

Claim 22 (Original): The heat-resisting low alloy steel welded component according to claim 20, wherein the base metal is subjected to the hot working in a normalizing temperature range, after the normalizing.

Claim 23 (Original): The heat-resisting low alloy steel welded component according to claim 20, wherein the welded component can be applied to at least one of longitudinal joint and circumferential joint of pipes, vessel, valve casing and branch pipes that are used under a high-temperature and high-pressure steam atmosphere at a temperature of 450°C or higher.

Claim 24 (Currently Amended): A long-life heat-resisting low alloy steel welded component manufactured by a method comprising:

subjecting a base metal containing, at % by weight, C: 0.2% or less, Si: 1.0% or less, Mn: 0.3 to 0.9%, Cr: 0.3 to 1.5%, Mo: 0.4 to 0.7%, and a balance of iron and unavoidable impurities, to a hot working, to a heat treatment, and then to a welding,

wherein the base metal is ~~normalized once~~ further subjected to a normalizing one or more times in addition to the ~~original~~ heat treatment and before the welding so as to reduce, at former austenite grain boundaries of the welded component, an amount of coarse carbides ~~, which have been found to be transformed to be the origin of that~~ cause creep damage of type 4 creep damage through the weld heat, ~~remained in the base metal passed through the original heat treatment only~~ relative to an amount of the coarse carbides that would occur in the welded component in the absence of the normalizing.

Claim 25 (Previously Presented): The heat-resisting low alloy steel welded component according to claim 24, wherein the base metal has been subjected to annealing, or normalizing and tempering.

Claim 26 (Original): The heat-resisting low alloy steel welded component according to claim 24, wherein the base metal is subjected to the hot working in a normalizing temperature range, after the normalizing.

Claim 27 (Original): The heat-resisting low alloy steel welded component according to claim 24, wherein the welded component can be applied to at least one of longitudinal joint and circumferential joint of pipes, vessel, valve casing and branch pipes that are used under a high-temperature and high-pressure steam atmosphere at a temperature of 450°C or higher.

Claim 28 (Original): The heat-resisting low alloy steel welded component according to claim 24, wherein the base metal contains, at % by weight, Mn: 0.3 to 0.6%, Cr: 0.5 to 1.5% and Mo: 0.40 to 0.65%.

Claim 29 (Original): The heat-resisting low alloy steel welded component according to claim 24, wherein the base metal further contains, at % by weight, V: 0.22 to 0.50%.